

Rituraj Navindgikar

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EDUCATION

Northeastern University, Boston, MA

Sept 2024 – Dec 2026

Master of Science in Robotics, concentration in computer science

Relevant Courses: Robot Mechanics and Control, Robot Sensing and Navigation

JSPM Rajarshi Shahu College of Engineering, Pune, India

Jan 2021 – Aug 2024

Bachelor of Technology in Computer Engineering, GPA: 3.8

Relevant Courses: Data Structures and Algorithms, Calculus and Transform, Probability and Statistics, Computer Graphics, Cloud Computing, Operating Systems, Software Testing and Quality Assurance, Computer Networks, Artificial Intelligence

TECHNICAL SKILLS

Programming Languages and Tools: Python, Java, C++, ROS, micro-ROS, Docker, PyTorch, Amazon Web Services

Data Structures and Algorithms: Algorithm design, Runtime complexity analysis and optimization

Machine Learning and Computer Vision: ML based virtual 3D perception, OpenCV in python/C++, Object Detection (YOLO), Image Classification, Neural network development

Mathematics and Computational Geometry: Advanced knowledge of linear algebra, vector algebra, and trigonometry for robotics and computer vision applications

Soft Skills: Leadership, communication, team collaboration, effective communication, quick learning, and problem-solving abilities

WORK EXPERIENCE

RollNDrive Pvt. Ltd., Pune, India

Software Developer Intern

July 2023 – July 2024

- Developed a 2D SLAM framework integrating RGBD cameras, IMU, and GPS for real-time localization and obstacle detection
- Integrated hybrid path planning algorithms, combining TEB-DWA for time-optimal, dynamic obstacle avoidance with RRT* for global trajectory optimization, enabling smooth, adaptive, and computationally efficient motion planning in dynamic and complex environments
- Streamlined workflows by implementing multi-threaded processing for parallel computation, optimizing image compression with efficient encoding formats, and utilizing ROI filtering to reduce unnecessary computation, achieving a 40% reduction in latency and faster project delivery timelines

PROJECTS

Team Cipher

Programming Lead

Aug 2022 – Dec 2024

- Led a 20+ member team to enhance 2D SLAM methodologies using adaptive mapping, feature-based techniques, perception, boosting spatial awareness and navigation accuracy by 40%
- Implemented ML-based virtual 3D perception and computer vision techniques using OpenCV (Python/C++), YOLO for object detection, and image classification models to optimize robot perception and decision-making, achieving All India Rank 10 at DD Robocon 2023

Programming Member

Oct 2021 – Aug 2022

- Developed expertise in C++, Python, micro-ROS, ROS, and OpenCV to address challenges in object detection and semantically aware navigation and having effective communication with onboard computer (Raspberry Pi 4B) and microcontroller (Raspberry Pi Pico 2040)
- Achieved All India Rank 22 at the Competition demonstrating teamwork and communication

Training and Placement Coordinator:

Oct 2021 – July 2024

- Trained over 200 students in technical and soft skills, significantly improving their placement readiness and success rates by 30% across leading technology firms
- Built key industry relationships, organized career fairs and workshops, and enhanced employer engagement, leading to a 25% increase in campus placement opportunities over three years

Lecture Capture Facility:

Developed a solution to automate lecture recording using existing hardware, programmed scripts to interface with cameras, synchronize with academic schedules, and store recorded data on college's Network Attached Storage (NAS) as well as cloud storage Amazon S3. Combined with the college's Moodle platform, enabling students to access lecture materials